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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Andrew Kirby et al.  
Application No. : 09/529,495  
Filed : June 15, 2000  
For : METHOD OF DISPERSING AN INSOLUBLE MATERIAL IN  
AQUEOUS SOLUTION AND AGRICULTURAL FORMULATION

#17  
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AS

Examiner : Kelechi C. Egwim  
Art Unit : 1713  
Docket No. : 470044.403USPC  
Date : April 29, 2002

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RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents:

In response to the Restriction Requirement dated March 29, 2002, issued by the Examiner for the above-identified application, Applicants hereby elect, with traverse, Group I, claims 1-6, drawn to a method of dispersing an active water-insoluble agrochemical principal in an aqueous solution using a particular alternating copolymer as a dispersant. Applicants respectfully traverse the above-mentioned Restriction Requirement (hereinafter, "the Restriction Requirement") for the reasons set forth below.

The Examiner has required, by way of the Restriction Requirement, that Applicant elect, for examination, one of: Group I, claims 1-6, drawn to a method of dispersing an active water-insoluble agrochemical principal in an aqueous solution using a particular alternating copolymer as a dispersant; Group II, claims 7-20, drawn to an agricultural formulation comprising an insoluble material which has been dispersed by the same type of alternating copolymer; Group III, claims 21-47, drawn to a method of making an agrochemical formulation

which involves combining an insoluble material with the same particular alternating copolymer as a dispersant, and, where necessary, performing further steps to prepare the formulation; and Group IV, claims 48-51, drawn to a method of treating a substrate with an active water-insoluble agrochemical principle which involves the step of dispersing the agrochemical principal in an aqueous medium using the same particular alternating copolymer as a dispersant.

The Examiner has further required, by way of the Restriction Requirement, Applicants to elect a single species, and any corresponding sub-species, in the event that Group II or Group III is elected. As Applicants have elected Group I, claims 1-6, no election of species is required or made herein.

The Examiner bases the above Restriction Requirement on PCT Rules 13.1 and 13.2 and his assertion that the claims of Groups I-IV do not relate to a single general inventive concept, and, therefore, lack the same or corresponding technical features because claim 7, at least, is anticipated by or obvious over US 4,175,066; JP 59051963; JP 04334535; JP 57063124; JP 56089829 or JP 62036302. Applicants respectfully, but strenuously, disagree and submit that the present invention is not anticipated by or obvious over the cited references, and that there is, in fact, at least one special technical feature that links all of the pending claims 1-51. In other words, Applicants respectfully submit that there is at least one technical feature that defines a contribution that each of the pending claims, considered as a whole, makes over the prior art, and that, therefore, pursuant to 37 C.F.R. § 1.475(a), pending claims 1-51 are characterized by unity of invention.

A special technical feature that links claims 1-51 is the particular class of alternating copolymers disclosed and claimed as the dispersant used for the present invention of claims 1-51. Applicants are the first to recognize that this particular class of alternating copolymers, the latter being water-soluble polyacids, offer unexpected advantages as dispersing agents for insoluble components of agrochemical formulations. The above cited references do not disclose, teach, or suggest using alternating copolymers *per se* for such dispersants. In other words, the cited references do not disclose, teach, or suggest that there is any advantage associated with using copolymers in alternating form for such dispersants. Further, Applicants note that a reference does not disclose, teach, or suggest using alternating copolymers simply by disclosing the use of a 1:1 ratio of monomers in preparing a copolymer therefrom. As is well

understood to one skilled in the art, a copolymer prepared using a 1:1 ratio of monomers will not necessarily have the degree of regularity necessary for it to be considered to have an alternating character.

Further, in the above regard, the meaning of the expressions "alternating copolymer" and "alternating character" will be clearly understood by one skilled in the art, particularly in view of the disclosure on pages 9 and 10 of the present specification. As indicated on those pages, it is usually necessary to carefully control the reaction conditions if an alternating copolymer is to be obtained. Some copolymers are, in practice, almost always going to be of alternating character because of the relative electronegativity of the monomers used to synthesize the same. An example is a copolymer of dicyclopentadiene and maleic anhydride. Nevertheless, even these copolymers can be made non-alternating by, for example, using block additions of monomers with changed reaction conditions for each additon.

Thus, a patentable aspect of the present invention is the inclusion and use of particular alternating copolymers, in view of the surprisingly improved performance of those copolymers as dispersants for the present invention, as compared to the corresponding non-alternating copolymers. As discussed, this aspect of the invention is not taught or suggested by the cited references.

That this aspect of the present invention is patentable is also clear in that it is well established that the discovery of the source of a problem may result in a patentable invention even if the solution would have been obvious once the source of the problem were discovered. *See, e.g., Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 68 (1922) (changing the angle of a conveyor was held to be a patentable method of solving the problem of making defective paper, even though changing the angle would have been obvious had the source of the problem been known) and *In re Sponnoble*, 405 F.2d 578, 160 U.S.P.Q. 237 (C.C.P.A. 1969) (a plural compartment mixing vial comprising a butyl rubber plug coated with silicone was held patentable over the prior art even though such vials were known and the use of the recited materials for the plug would have been obvious had the prior art appreciated that the problem solved – namely, the transmission of moisture between vial compartments – was caused by moisture transmitted *through* the plug, rather than *around* it).

In the present case, the problem is that the class of copolymers under consideration are limited in their performance as dispersants for active water-insoluble agrochemical principals in an aqueous solution. The discovery of the source of the problem, which is not found in the cited references, was made by Applicants, the discovery being that the copolymers were non-alternating, rather than alternating. This is a patentable aspect of the present invention and, in particular, is a patentable aspect of all pending claims 1-51.

For the above reasons, the particular alternating copolymers of the pending claims 1-51 provide a "special technical feature" linking all of those claims, as that expression is defined in 37 C.F.R. § 1.475(a). Also, all of Group II claims are directed to the product of the present invention, all of Group I and Group III claims are directed to a process specially adapted for the manufacture of the product, and all of Group IV claims are directed to a use of the product. Therefore, all of the pending claims 1-51 are drawn to the combination of categories of 37 C.F.R. § 1.475(b)(3). In this regard, Applicants note that MPEP § 1850 provides that the words "specially adapted" are not intended to imply that the product could not also be manufactured by a different process. Rather, according to MPEP § 1850, "a process shall be considered to be specially adapted for the manufacture of a product if the claimed process inherently results in the claimed product, with the technical relationship being present between the claimed product and the claimed process."

Thus, pursuant to 37 C.F.R. §§ 1.475(a) and 1.475(b), pending claims 1-51 are characterized by unity of invention, and the above Restriction Requirement is improper.

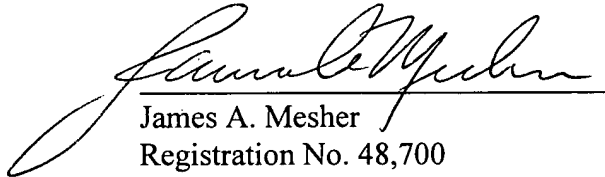
In addition, Applicants respectfully submits that a search of the prior art relevant to the product claims would necessarily uncover any relevant art concerning the process and use claims. Therefore, Applicants do not believe that examination of these three categories of claims would constitute a serious or undue burden on the Examiner.

Accordingly, Applicants respectfully request that the Examiner consider the Group II product claims, Group III process claims, and Group IV use claims, in addition to the elected Group I process claims.

Respectfully submitted,

Andrew Kirby et al.

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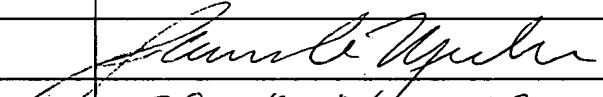
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	Group Art Unit	1713
	Examiner Name	Kelechi C. Egwim
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**ENCLOSURES (check all that apply)**

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Remarks

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Individual Name	James A. Mesher	 00500 PATENT TRADEMARK OFFICE
Signature		
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